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A NEW APPROACH TO COMMUNICATION FOR THE SEVERELY  
PHYSICALLY HANDICAPPED CHILD

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In the Fall of 1971, a team composed of staff members from the departments of Speech Therapy, Occupational Therapy, Education, Rehabilitation Engineering and Psychology of the Ontario Crippled Children's Centre in Toronto was formed to study, develop and evaluate a communication system which would meet the needs of a specific group of children enrolled at the Centre. This group consisted of young physically handicapped, primarily cerebral-palsied children in whom disturbances of the respiratory, phonatory and articulatory systems were so severe as to prevent or markedly retard the development of functional speech.

This inability to develop functional speech deprives these children of a fundamental tool of communication and prevents them from engaging in interpersonal relationships in their most commonly accepted form, that is by talking. It hinders them in their development of language concepts and conceptualized thinking and creates within them severe feelings of frustration.

The aim of the communication program was to develop a system which could be used as an adjunct to speech in order to allow severely physically handicapped, non-verbal children to express their needs, alleviate their frustrations and develop motivation for continued communication. An approach was sought which would capitalize on the children's abilities and which could be introduced at an age when they would be developmentally ready to communicate. The widely-used communication board was accepted as a satisfactory basic form with the letters and pictures being replaced by symbols which could be easily learned and would be capable of combination in many ways to provide a means of expressing a multitude of thoughts, feelings and concerns. A survey of the materials available indicated that a system had been devised by Mr. Charles K.





Bliss, an Australian, the aim which was to provide an international language of visual symbols. These symbols are logically developed representations, many of which approximate a child's experience. They have meaning individually and in combination, such that they can provide an elaborate means of expression. Before continuing with a description of the program I would like to briefly illustrate several of the symbols in order to demonstrate how they have been developed and the ways in which they are capable of combination.

#### SLIDE

During the academic year 1971-72, when the program was being initially developed, six children who were attending the school at the Centro were introduced to the use of the symbols. These children attended the "communication class" for approximately 30 minutes four times weekly with limited carryover into other situations. Even with this limited exposure, the children demonstrated that Bliss symbols could be learned readily and they displayed an eagerness to use symbols as a method of communicating. Within a short while the children were not only responding to questioning by the teacher, but were using symbols to ask their own questions and to initiate interaction with their peers. During this first year the method of presentation of the symbols was developed and much discussion took place as to the number of symbols needed to provide the children with a full, varied vocabulary for communication.

During this same time work was initiated on the development of the trays on which the symbols were to be displayed. These trays were to be individually designed, with the method of operation being specifically developed according to the physical capabilities of each child. Since the symbols were to be the main method of communication, it was considered essential that the trays be designed so as to accompany the children at all times. They therefore had to be easily portable and when attached to a wheelchair had to fit through doorways. They were to be covered with clear acrylic so that they could double as a work and eating surface as well as serve any other





needed function. Because of the desire to provide the children with a maximum number of symbols for communication in spite of the imposed limitations due to the size of the tray, the concept of multisymbols was developed in which ten symbols of similar content or part of speech were combined into one large multisymbol. Examples of multisymbols are included on the sheets which have been distributed.

Using this system of multisymbols it was determined that a maximum number of 34 multisymbols or 340 symbols could be accommodated on the trays. The selection of symbols was conducted with a view to providing a varied vocabulary suited to the needs and interests of the population for which it was intended as well as to providing symbols which could be readily combined with others to produce a greatly expanded vocabulary of well beyond the actual 340. For example, the symbol for "the opposite of" is included, thus enabling the children to say "cold" by pointing to "the opposite of" and then pointing to "hot". In addition to expanding vocabulary, symbols of this type have aided in the development of abstract and conceptualized thinking. It was found that some of the children, because of limitations of either electronic equipment or learning ability, could not handle 340 symbols so an intermediate, reduced vocabulary of 100 symbols or 10 multisymbols was also developed.

In June 1972 the utility and feasibility of symbols as a method of communication was recognized. For the academic year 1972-73 two full-day "communication classes" have been set up in which symbol usage is being related to the children's total learning program. One of the classes consists of five children who because of learning and manual ability are able to handle 340 symbols. These children do not require any electronic aids on their trays. The other class consists of five children whose trays contain the 100 symbols, either because of the need for specifically designed interfaces to operate the trays or due to inability to learn 340 symbols at the present time. Of the original six children, two are in the "340" class and two are in the "100" class. Two





have left the program, one because of observed visual perceptual problems which would have necessitated the development of a very different method of symbol presentation and the other due to parental inability to accept this method of communication.

All the children in the two classes range in age from 6 years, 9 months to just over 9 years with the exception of one boy who is fourteen years of age. Nine of the children have a form of cerebral palsy; the tenth child has a brain stem injury resulting from a motor vehicle accident. All are demonstrating a learning ability despite the fact that many were diagnosed as mentally retarded at an earlier age and several have already attended schools for the retarded for varying lengths of time. Academically, all are within the reading readiness to grade two range. All have good auditory acuity and adequate verbal comprehension, both of which are mandatory as the teaching method is through verbal presentation. All the children have received extensive individual speech therapy in the past; only two are presently on a speech therapy program. All are being followed closely by the speech pathologist working in the program and each will be considered for therapy at such time as this appears appropriate. The parents and families of the children have responded enthusiastically to the program and there is a great deal of carry-over into the home situation. The children now join into family conversations and worksheets are even being developed by some of the mothers. One mother has joined the team to aid in the development of the program.

#### SLIDES

From a speech pathologist's point of view the results of the Bliss symbol program have been most encouraging and exciting. The children have demonstrated the effectiveness of symbols as a substitute for oral speech production in the communication process. They have also shown a great deal of creative ability - at Halloween they made up their own symbol for "ghost",





this being "make believe man opposite of being seen". Of particular interest has been the finding that many of the children have begun to produce words verbally while using symbols. It would appear that as the need and pressure on the child for speech production is decreased, so also is the tension in the oral musculature decreased and thus the child is able to verbalize more readily. While it should not be concluded that speech will develop sufficiently to be of functional use to these children, this behaviour is of course being encouraged and reinforced.

Use of the Bliss symbol approach to communication implies that the child's visual, auditory and intellectual skills are intact. This is not to say that the system cannot be used with such populations as the mentally retarded or the multiply-handicapped. However other approaches to its presentation will have to be developed, specific to the needs of these groups. It would be hoped that in the future, once a complete syllabus for teaching Bliss symbols has been prepared, adaptations will be made to render the system suitable for populations with problems such as mental retardation, hearing loss, aphasia, auditory and/or visual perceptual disorders and even emotional disorders.

As exciting as the results to date may appear, it must be stressed that the Bliss symbol system of communication was initially undertaken as a developmental rather than as a research-oriented program. Only recently has it become possible to begin a systematic approach to the study of the use of symbols as an alternate means of communication. Funds have become available for a research linguist and consultants in other areas to join the team and for further development of the electronic equipment. It is anticipated that during the forthcoming year much additional information will be obtained from the ongoing presentation of the symbols and that at the end of the year an extensive, objective evaluation of the program will be undertaken.

